

AMENDMENTS TO THE SPECIFICATION

Referring to International Publication WO03/076762 of PCT/NO03/00077 of which this case is a 35USC371 filing, please amend the specification as follows:

Please replace the paragraph beginning at page 1, line 20, with the following rewritten paragraph:

--Normally, riserless drilling takes place down to the setting point for, e.g., a 20" surface casing, typically 800 m below mudline (BML). Riserless drilling in this context means that the drill string is not enclosed within a tube or riser. Since at this depth the risk of encountering a formation containing fluids and/or gas that may escape is increasing from this point, most deep water drilling systems are based on using a standard 18 3/4" wellhead, a 18 3/4" BOP and a 21" marine drilling riser. If fluids and/or gas should escape from the well bore, these will flow into the drilling riser and not pollute the seawater. The standard system is hereafter termed 18 3/4" wellhead system. Through the system, comprising the drilling riser, the BOP and the wellhead, the casings will be installed. As the second stage of the well bore normally a hole with a size to receive a 13 3/8" casing will be drilled. Then a third stage with a hole to receive a 9 5/8" casing will be drilled and subsequently a fourth stage to receive a 7" liner will be drilled. Finally a 7" tie-back string for production may be installed. Logging, coring and well testing will normally be performed in a 8 1/2" open hole section below the 9 5/8" casings.--

Please replace the paragraph beginning at page 2, line 11, with the following rewritten paragraph:

-- The main objective of the present invention is to reduce the needed diameter of the drilling riser. This is achieved by ~~pre-installing~~ pre-positioning one or more liners below the substantial part of the drilling riser, preferably inside the surface casing, and drill the holes for these liners using underreamers after the BOP and marine drilling riser have been installed. This

would allow a very small diameter riser to be used, and thus allow a low cost drilling vessel to be used. ~~Preferably~~ Preferably a set of telescopic liners are installed below the well head. --

Please replace the paragraph beginning at page 3, line 4, with the following rewritten paragraph:

-- Optionally, one or more additional casings or tie-back casings can be suspended in the well head after any of the ~~pre-installed~~ pre-positioned liners have been set, which additional casing or a tie-back casing extends over and internally of the ~~pre-installed~~ pre-positioned liners, to allow for a higher pressure rating, if required. The additional casing has a smaller external diameter than the riser. In such a case a shoulder or groove in the wellhead will be needed. --

Please replace the paragraph beginning at page 3, line 13, with the following rewritten paragraph:

-- Figure 1 shows satellite well with a ~~pre-installed~~ pre-positioned telescopic liner system according to present invention, --

Please replace the paragraph beginning at page 3, line 16, with the following rewritten paragraph:

-- figure 2 illustrates the cementing of the first liner of the ~~pre-installed~~ pre-positioned telescopic liner system of figure 1, --

Please replace the paragraph beginning at page 3, line 19, with the following rewritten paragraph:

-- figure 3 illustrates the drilling of the hole for the second stage of the ~~pre-installed~~ pre-positioned telescopic liner system of figure 1, --

Please replace the paragraph beginning at page 3, line 22, with the following rewritten paragraph:

-- figure 4 illustrates the cementing of the second liner of the ~~pre-installed~~ pre-positioned telescopic liner system of figure 1, --

Please replace the paragraph beginning at page 4, line 1, with the following rewritten paragraph:

-- Figure 1 illustrates the concept of a satellite well with a ~~pre-installed~~ pre-positioned telescopic liner system according to present invention based on using a set of ~~pre-installed~~ pre-positioned liners consisting of a 11 $\frac{3}{4}$ " liner 1 and a 9 $\frac{5}{8}$ " liner 2 inside a 14" surface casing 3 connected to the wellhead 9. A 5" drill string 4 with a mud motor 5, a bit 6 and an underreamer 7 is used. --

Please replace the paragraph beginning at page 4, line 16, with the following rewritten paragraph:

-- The well head 9 connected to the surface casing 3 with the ~~pre-installed~~ pre-positioned liners 1,2 suspended inside is run in hole 40 and landed in the conductor housing 99 using the drill string. Optionally, these components may also be installed separately by first installing (and cementing) the 14" surface casing 3 and then install the telescopic liners 1, 2 inside of the 14" surface casing with the well head 9 on top using the drill string. --

Please replace the paragraph beginning at page 4, line 22, with the following rewritten paragraph:

-- The well head 9 connected to the surface casing 3 with the ~~pre-installed~~ pre-positioned liners 1,2 suspended inside the surface casing 3 can also be lowered by suspending it to the lower

end of the drilling riser 10. Preferably, a blow out preventer (BOP) -100 is also installed on top of the well head 9. --

Please replace the paragraph beginning at page 4, line 27, with the following rewritten paragraph:

-- The ~~pre-installed~~ pre-positioned liners 1, 2 can also be lowered by suspending it inside the lower part of the drilling riser 10. Preferably, a blow out preventer (BOP) -100 is also connected to the lower most end of the drilling riser. --

Please replace the paragraph beginning at page 4, line 31, with the following rewritten paragraph:

-- The ~~pre-installed~~ pre-positioned liners 1,2 can also be lowered by suspending it to the drill string. Preferably, a blow out preventer (BOP) -100 is also connected to the wellhead. --

Please replace the paragraph beginning at page 5, line 29, with the following rewritten paragraph:

-- Alternatively to the underreamer 7 a ~~pre-installed~~ pre-positioned core bit 15 may be used. The ~~pre-installed~~ pre-positioned bit 15 is ring shaped with an internal diameter allowing the 8 ½" drill bit to pass, and an outer diameter of about 14". The ~~pre-installed~~ pre-positioned bit 15 is suspended to the lower end of the set of telescopic liners 1, 2 before installing these. The suspension is preferably done by shear pins (not shown) that may be broken when the ~~pre-installed~~ pre-positioned bit 15 is to be used, or slips that may be retracted when the ~~pre-installed~~ pre-positioned bit 15 is to be used. When the drill string 4 is lowered through the internal diameter of the ~~pre-installed~~ pre-positioned bit 15 formations (not shown), e.g., ridges, dogs or the like, on the drill bit 6 or on the lower end of the drill string 4 will interact with formations on the ~~pre-installed~~ pre-positioned bit 15 to engage the drill string 4 with the ~~pre-installed~~ pre-positioned bit 15. When the drill string 4 is further lowered or rotated the shear pins will be

broken or the slips will be retracted to disengage the ~~pre-installed~~ pre-positioned bit 15 from the set of telescopic liners 1, 2. Then the ~~pre-installed~~ pre-positioned bit 15 in combination with the drill bit 6 will be used for drilling the next bore hole section 21 with a 14" diameter for installation of the 11 ³/₄" ~~pre-installed~~ pre-positioned liner 1. When this bore hole section 21 is finished, in the case of an underreamer 7 being used, the underreamer 7 will be retracted and run to the surface by the drill string 4. In the case of a ~~pre-installed~~ pre-positioned drill bit 15 being used, the drill bit 15 may be disconnected from the drill string 4, e.g., by breaking shear pins of retracting slips, in a *per se* known way, and simply be left downhole. The 8 ¹/₂" drill bit will be able to pass through the internal diameter of the ~~pre-installed~~ pre-positioned drill bit 15 anyway, and the internal diameter may be made large enough for the 9 ⁵/₈" liner 2 to pass. --

Please replace the paragraph beginning at page 6, line 19, with the following rewritten paragraph:

-- After the drilling of the bore hole section 21, the cementing of the ~~pre-installed~~ pre-positioned liners may take place as illustrated in Figure 2. The 11 ³/₄" liner is run in place using the drill string 4. To facilitate this the drill string 4 is equipped with a liner hanger running tool 16, which is designed to engage with the first hanger 12 on the 11 ³/₄" liner 1, release the first hanger 12 from the surface casing 3 and hold the 11 ³/₄" liner while the drill string is lowered. The 11 ³/₄" liner is hung off in the surface casing 3 by the first hanger 12. --

Please replace the paragraph beginning at page 7, line 5, with the following rewritten paragraph:

-- Figure 3 illustrates drilling of a 12 ¹/₄" bore hole section 22 for the 9 ⁵/₈" ~~pre-installed~~ pre-positioned liner 2. After the bore hole section 22 is drilled, the 9 ⁵/₈" liner 2 is gripped by the same liner running tool 16 that was used to lower the 11 ³/₄" liner 1. The lowering of the 9 ⁵/₈" liner 2 is conducted in the same way as the 11 ³/₄" liner 1, and will consequently not be described in detail. After the 9 ⁵/₈" liner 2 is lowered the same cementing tool 17 is used for installation and cementing of the 9 ⁵/₈" liner 2 as for the 11 ³/₄" liner 1. Figure 4 illustrates

cementing of the liner 2, which is conducted in substantially the same way as for the 11 3/4" liner 1. Finally, a 8 1/2" hole (not shown) is drilled, and a 7" liner is run and cemented in a conventional way. --

Please replace the paragraph beginning at page 7, line 15, with the following rewritten paragraph:

-- Figure 5 shows the complete casing program. The 18 5/8" conductor casing is set at, e.g., 2620 m MD (Measure Depth) (100 m BML) and the 14" surface casing 3 is set at 3320 m MD (800 m BML). The invention requires the use of a proper underreamer 7 that can pass through the internal diameter of the 10 3/4" riser 10, which is typically 9 1/2", and through the internal diameter of the 9 5/8" liner 2, which is typically 8 1/2", or a pre-installed pre-positioned drill bit 15. For the 11 3/4" pre-installed pre-positioned liner 1, a 8 1/2" bit 6 and a 14" underreamer is used for drilling the hole section 21 to 4020 m MD (1500 m BML). Alternatively, the pre-installed pre-positioned core bit 15 can be run along with the pre-installed pre-positioned liners 1, 2. When the drill string 4 with the 8 1/2" bit 6 is in place, the core bit 15 is connected and run along with the bit 6. After the borehole section 21 has been drilled to final depth, the core bit 15 is left in the hole and allows the 9 5/8" pre-installed pre-positioned liner 2 to pass through. --

Please replace the paragraph beginning at page 7, line 28, with the following rewritten paragraph:

-- Alternatively to first drilling the bore hole section 21 and subsequently lowering the liner 1 into the bore hole section, it is also possible to lower the liner 1 simultaneously with the drilling. Thus, the pre-installed pre-positioned drill bit 15 may also be rotatably connected to the lower end of the liner 1, so that as the pre-installed pre-positioned drill bit 15 is churning down the formation, the liner 1 will be drawn downward, preferably without rotating. --

Please replace the paragraph beginning at page 8, line 1, with the following rewritten paragraph:

-- For the 9 ⁵/₈" ~~pre-installed pre-positioned~~ liner 2, the 8 1/2" drill bit with a 12 1/4" underreamer 18 (see figure 3) is used for drilling the hole section to 4720 m MD (2200 m BML). The 12 1/4" underreamer 18 may be the same as the underreamer 7, wherein the underreamer 7 is designed to be retracted from a 14" diameter to an intermediate position of 12 1/4" diameter. Alternatively, the 12 1/4" bit is a separate underreamer that replaces the underreamer 7. --

Please replace the paragraph beginning at page 8, line 9, with the following rewritten paragraph:

-- After the ~~pre-installed pre-positioned~~ telescopic liners 1, 2 are installed and cemented, an 8 1/2" hole section 23 is drilled for a 7" liner 19. The 7" liner is installed through the drilling riser 10 and cemented in a conventional way. If a deeper well is needed, a 6" hole section 24 can be drilled for a 5 " liner (not shown). --

Please replace the paragraph beginning at page 8, line 14, with the following rewritten paragraph:

-- Figure 6 illustrates the use of an expandable contingency liner 30. This liner is set in the 9 ⁵/₈" ~~pre-installed pre-positioned~~ liner 2, and expanded from 6,25" x 6,875" to 7,828" x 8,542". This allows a 7" liner 31 to pass through. For the 7" liner 31, an underreamer (not shown) with a diameter of 7 ⁷/₈" to 8 1/2 " is used for drilling a hole section to 5720 m MD (2500 m BML). --

Please replace the paragraph beginning at page 8, line 20, with the following rewritten paragraph:

-- Figure 7 shows an alternative to a set of ~~pre-installed~~ pre-positioned telescopic liners 1, 2. In this case only one liner 32 is ~~pre-installed~~ pre-positioned below the wellhead. This liner 32 is lowered into the well bore and cemented substantially the same way as explained in connection with the 11 3/4" liner 1 in figures 1 and 2. Thereafter a further borehole section is drilled. An expandable liner 33 is then inserted through the drilling riser 10 and the liner 32. Then the liner is cemented, expanded and set using conventional technology. The drilling is commenced by passing a drill bit with a diameter less than the internal diameter of the liner 33. Finally, a liner, e.g., a 7" liner 34 will be inserted through the well head, the liner 32 and the liner 33. An expandable liner hanger can also be used for suspension and sealing of the expandable liner 33. --

Please replace the paragraph beginning at page 9, line 1, with the following rewritten paragraph:

-- An expandable liner hanger can also be used both for the ~~pre-installed~~ pre-positioned liners (1, 2). A conical ring can be ~~pre-installed~~ pre-positioned at any suitable place within the liner or liner hanger. The ring shaped cone can be installed in a section of the liner or liner hanger having a smaller material thickness than the surrounding sections of the liner or liner hanger. A tool acting on the cone by mechanical or hydraulic means can be used to force the cone into the section of the liner or liner hanger having a larger material thickness. Thus, the material of the liner or liner hanger will be forced radially outward and into contact with the larger casing or liner, in a *per se* now way in connection with conventional cones without a central opening. After the expansion, the ring shaped cone is left in place, since the internal diameter is large enough to allow equipment to pass. --

Please replace the paragraph beginning at page 9, line 25, with the following rewritten paragraph:

-- The total hook load for suspending a 800 m long 14" casing with 800 m long sections of 11 3/4" and 9 5/8" ~~pre-installed~~ pre-positioned liners using a 5", 2500 m long drill string is in

the order of 250 tons. Therefore, the selected drilling rig must have sufficient hook load capacity.

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Please replace the paragraph beginning at page 9, line 29, with the following rewritten paragraph:

-- Depending on selection of casing and liner sizes and grade, a pressure rating between 5000 and 10000 Psi can be obtained. By increasing the wall thickness of the 11 3/4" ~~pre-installed~~ pre-positioned liner and possible the 14" surface casing, a 10000 Psi completion is achievable. The pressure rating of post-expanded liners is reduced, and therefore, internal casing or liners may be needed to maintain the pressure integrity of the well. --

Please replace the paragraph beginning at page 10, line 28, with the following rewritten paragraph:

-- Alternatively, although it is not the best embodiment of the present invention, the ~~pre-installed~~ pre-positioned liners may be installed in a lower part of the drilling riser having a larger diameter than the ~~pre-installed~~ pre-positioned liners. Above this lower part the diameter of the drilling riser can be reduced under the diameter of the ~~pre-installed~~ pre-positioned liners. The internal diameter of the well head will of course have to be larger than the ~~pre-installed~~ pre-positioned liners. By this the substantial part of the drilling riser may have a reduced diameter. --